CLAIMS

What is claimed is:

1. A subwoofer speaker adapted for recessed installation in a building structure, the subwoofer speaker comprising:

a housing having

a height;

a width; and

a depth, the depth of the housing dimensioned to be recessed within the building structure;

a driver movable to produce waves; and

an elongated internal chamber within the housing and through which waves produced by the driver propagate, the elongated chamber having a height along the height of the housing and a cross-sectional width, the height of the chamber being no less than 2.7 times the width of the chamber.

2. The subwoofer speaker of claim 1, wherein the housing is adapted to be recessed within the building structure along substantially the entire height of the housing.

3. The subwoofer speaker of claim 1, wherein the height of the chamber is no less than 5.0 times the width of the chamber.

4. The subwoofer speaker of claim 3, wherein the housing is adapted to be recessed within the building structure along substantially the entire height of the housing.

5. The subwoofer speaker of claim 1, wherein:

the housing is adapted for installation within a cavity between two substantially parallel elongated structural members; and

the width of the housing is no greater than 16 inches and is received between the structural members.

6. The subwoofer speaker of claim 1, wherein the housing is adapted for installation in a cavity having a depth of no greater than four inches, and wherein the depth of the housing is no greater than four inches.

7. The subwoofer speaker of claim 1, further comprising at least one bracket coupled to the housing and adapted to be mounted to the building structure.

8. The subwoofer speaker of claim 7, wherein the at least one bracket is releasably coupled to the housing.

9. The subwoofer speaker of claim 1, wherein the internal chamber has a cross-sectional depth, and wherein the height of the internal chamber is not less than 5.5 times the cross-sectional depth.

10. The subwoofer speaker of claim 1, wherein the internal chamber has a cross-sectional depth, and wherein the height of the internal chamber is not less than 11.5 times the cross-sectional depth.

11. The subwoofer speaker of claim 1, wherein the internal chamber has a cross-sectional depth, and wherein the height of the internal chamber is not less than 23.0 times the cross-sectional depth.

12. The subwoofer speaker of claim 1, wherein the housing has a cross-sectional shape along the depth of the housing that is substantially rectangular.

13. The subwoofer speaker of claim 1, wherein the driver is oriented at least 45 degrees with respect to a longitudinal axis of the elongated chamber.

14. The subwoofer speaker of claim 1, wherein the driver is oriented at least 80 degrees with respect to a longitudinal axis of the elongated chamber.

15. The subwoofer speaker of claim 1, wherein the driver is oriented approximately 90 degrees with respect to a longitudinal axis of the elongated chamber.

16. An amplifier adapted for recessed installation in a building structure, the amplifier comprising:

a housing having

a height,

a width, and

a depth, the depth of the housing dimensioned to be recessed within the building structure;

a power supply circuit located within the housing; and

an audio amplifier circuit located within the housing and coupled to the power supply circuit for receiving power therefrom, the audio amplifier circuit adapted to be coupled to a source of audio signals;

wherein the height of the housing is no less than 3.0 times the depth of the housing, and the width of the housing is no less than 2.0 times the depth of the housing.

17. The amplifier of claim 16, wherein the audio amplifier circuit includes a class-D audio amplifier.

18. The amplifier of claim 16, wherein the power supply circuit includes a power transformer coupled to a rectifier and a filter circuit.

19. The amplifier of claim 18, wherein the power transformer comprises a toroidal power transformer.

20. The amplifier of claim 16, wherein the housing is adapted to be recessed within the building structure along substantially the entire height of the housing.

21. The amplifier of claim 16, wherein the height of the housing is no less than 4.0 times the depth of the housing.

22. The amplifier of claim 16, wherein the height of the housing is no less than 5.0 times the depth of the housing.

23. The amplifier of claim 16, wherein the width of the housing is no less than 3.0 times the depth of the housing.

24. The amplifier of claim 16, wherein the width of the housing is no less than 4.0 times the depth of the housing.

25. The amplifier of claim 16, wherein:

the housing is adapted for installation in a cavity between two substantially parallel elongated structural members; and

the width of the housing is no greater than 16 inches and is received between the structural members.

26. The amplifier of claim 16, wherein:

the housing is adapted for installation in a cavity having a depth of no greater than four inches; and

the depth of the housing is no greater than four inches.

27. A subwoofer speaker adapted for recessed installation in a building structure, the subwoofer speaker comprising:

an elongated housing having

a height defined along a longitudinal axis of the elongated housing,

a width, and

a depth, the depth of the elongated housing dimensioned to be recessed within the building structure;

an internal chamber defined by walls of the elongated housing, the internal chamber having

a height extending along the longitudinal axis of the elongated housing, and

a width,

the height of the chamber being no less than 2.7 times the width of the chamber; and

a driver movable to generate waves propagating from the driver in a direction oriented at least 45 degrees with respect to the longitudinal axis of the elongated chamber.

28. The subwoofer speaker of claim 27, wherein the driver comprises a speaker cone having an axis of movement defining the direction.

29. The subwoofer speaker of claim 27, wherein the waves propagate from the driver in a direction oriented at least 80 degrees with respect to the longitudinal axis of the elongated chamber.

30. The subwoofer speaker of claim 27, wherein the waves propagate from the driver in a direction oriented approximately 90 degrees with respect to the longitudinal axis of the elongated chamber.

31. The subwoofer speaker of claim 30, wherein the driver is positioned at an end of the elongated housing.

32. The subwoofer speaker of claim 27, wherein the driver is positioned at an end of the elongated housing.

33. The subwoofer speaker of claim 32, wherein the driver is positioned to face outwardly from the building structure when the speaker is installed in the building structure.

34. The subwoofer speaker of claim 27, further comprising an air port through which sound waves propagate, the air port establishing fluid communication between the internal chamber and an area outside of the elongated housing.

35. The subwoofer speaker of claim 34, wherein the air port is defined in a side of the elongated housing, and has an elongated cross-sectional shape.

36. The subwoofer speaker of claim 27, wherein the height of the internal chamber is no less than 5.0 times the width of the internal chamber.

37. A method of producing sound with a subwoofer speaker, comprising:

moving a subwoofer driver to generate sound waves;

propagating the sound waves within and along an elongated chamber recessed within a building structure, the elongated chamber having a longitudinal axis, a height along the building structure and the longitudinal axis, and a depth recessed within the building structure, the height of the elongated chamber being no less than 5.5 times the depth of the elongated chamber; and

emitting sound waves from a surface of the subwoofer driver to an area adjacent the building structure in a direction oriented at least 45 degrees with respect to the longitudinal axis of the elongated chamber.

38. The method of claim 37, wherein the sound waves are emitted from the surface of the subwoofer driver in a direction oriented at least 80 degrees with respect to the longitudinal axis of the elongated chamber.

39. The method of claim 37, wherein the sound waves are emitted from the surface of the subwoofer driver in a direction oriented at least 90 degrees with respect to the longitudinal axis of the elongated chamber.

40. The method of claim 39, wherein the height of the elongated chamber is no less than 11.5 times the depth of the elongated chamber.

41. The method of claim 37, wherein the height of the elongated chamber is no less than 11.5 times the depth of the elongated chamber.

42. The method of claim 37, wherein the height of the elongated chamber is no less than 23.0 times the depth of the elongated chamber.

43. The method of claim 37, further comprising emitting sound from a port extending between the chamber and the area adjacent to the building structure.

44. The method of claim 37, further comprising reflecting the sound waves from an end of the housing opposite the driver.

45. An amplifier mounting structure for mounting an amplifier in a recessed position within a building structure, the amplifier mounting structure comprising:

a frame shaped to receive the amplifier, the frame having at least one mounting location at which the frame is adapted to be mounted within a cavity in the building structure; and

a fastener connecting the amplifier to and within the frame.

46. The amplifier mounting structure of claim 45, wherein the frame substantially surrounds the amplifier.

47. The amplifier mounting structure of claim 45, wherein the frame is substantially rectangular and receives a rear portion of the amplifier.

48. The amplifier mounting structure of claim 45, wherein the fastener is integral with a portion of the frame.

49. The amplifier mounting structure of claim 48, wherein the fastener is releasably engagable with an element on the amplifier.

50. The amplifier mounting structure of claim 45, wherein the frame has at least one aperture through which amplifier wiring extends.

51. The amplifier mounting structure of claim 45, wherein the frame has a rear wall in facing relationship with a rear wall of the amplifier when installed in the frame.

52. The amplifier mounting structure of claim 45, wherein the frame has at least one alignment aperture by which the frame can be aligned with respect to the building structure by a pre-determined recess distance with respect to a front surface of the building structure.

53. The amplifier mounting structure of claim 45, wherein the amplifier is snap-fit into the frame.

54. The amplifier mounting structure of claim 45, wherein the frame is adapted to be mounted to adjacent studs in the building structure.

55. The amplifier mounting structure of claim 45, wherein the frame includes at least one electrical connector.

56. A method of installing an amplifier in a recessed position within a building structure, the method comprising:

mounting a frame within a cavity in the building structure;

inserting a rear portion of the amplifier into the cavity and inside the frame;

pushing the amplifier to a recessed position within the building structure; and

supporting the amplifier within the frame.

57. A bracket for electrically connecting an amplifier having an electrical connector and recessed within a cavity of a building structure, the bracket comprising:

a first portion adapted to be mounted to the building structure in a first location within the cavity;

a second portion extending to a second location a distance from the first location; and

an electrical connector mounted to the second portion at the second location, the electrical connector of the bracket positioned in the second location to connect with the electrical connector of the amplifier upon insertion of the amplifier into the cavity.

58. The bracket of claim 57, wherein the bracket is part of a frame shaped to receive the amplifier.

59. The bracket of claim 57, wherein the second portion is fixed with respect to the first portion.

60. The bracket of claim 57, wherein the bracket is adapted to at least partially support the amplifier in the cavity.

61. The bracket of claim 57, wherein the electrical connector is at least one of a power connector and an audio signal connector.

62. A method of electrically connecting an amplifier within a building structure, the method comprising:

inserting the amplifier into a cavity of the building structure;

pushing the amplifier into a recessed position within the cavity; and

establishing an electrical connection to the amplifier by pushing the amplifier into the recessed position within the cavity.

63. The method of claim 62, wherein inserting the amplifier includes inserting the amplifier into a frame recessed within the building structure.

64. The method of claim 63, wherein inserting the amplifier includes fastening the amplifier within the frame.

65. The method of claim 62, wherein the electrical connection is at least one of a power connection and an audio signal connection.

66. The method of claim 62, wherein establishing an electrical connection includes connecting an electrical connector on the amplifier to an electrical connector within the cavity.

67. The method of claim 66, wherein the electrical connector is connected to a wall within the cavity.